



Exceptional concentration of fish diversity in Yasuní National Park, Ecuador (Napo River Basin)

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Abstract

Background

Despite limited access and rather deficient sampling in many lowland areas of eastern Ecuador, scientists have been able to demonstrate that this specific region of Amazonia houses extraordinarily high concentrations of species within several taxa – terrestrial and aquatic, plant and animal, vertebrate and invertebrate.

New information

In this work, we developed an updated list of the ichthyofauna of the Yasuní National Park (YNP), based on an extensive literature review and databases of the most representative ichthyological collections from Ecuador. Our results yielded 458 species of freshwater fishes distributed in 47 families and 13 orders. This number exceeded previous fish lists

from YNP and accounts for a considerable proportion of species inhabiting the Napo River Basin as well as the entire Amazon River Basin.

The higher-than-previous-reported species diversity within this protected area, the services these species provide to humans and the absence of invasive species underscore the need for greater efforts and investment in protecting and managing western Amazonian lands and waters.

Keywords

aquatic ecosystems, megadiversity, protected areas, teleosts, western Amazon

Introduction

Galacatos et al. 1996, Galacatos et al. 2004, Escobar-Camacho et al. 2015 The Amazon River Basin is widely recognised as a region of extraordinary biological diversity, though popular discussions often focus primarily on its expansive lowlands. Within greater Amazonia, there are areas of exceptionally high species concentrations (from trees to insects and vertebrates) along a rather narrow crescent that extends from eastern Colombia in the north, through eastern Ecuador and eastern Peru and southwards to north-eastern Bolivia (Mittermeier et al. 2011, Kass et al. 2022, Sabatini 2022). The terrain along this strip of the western Amazon Basin exhibits striking topographic variation, with elevations ranging from over 6000 m at the Andean continental divide to less than 200 m within a few hundred kilometres (Sayre et al. 2008). This steep elevational gradient, combined with the equatorial position of Ecuador, has fostered the evolution and maintenance of hyper-diverse biota (Thomassen et al. 2011). The rapid shifting orographic feature of the young Andes has also driven biological diversification over the past few million years (Galvis et al. 2006, Wilkinson et al. 2010). Approximately half of the territory of Ecuador lies within the Amazonian biome, where protected areas, including Yasuní National Park (YNP), created in 1979, safeguard biodiversity and indigenous communities. YNP spans 1,029,566.32 hectares, with elevations ranging from 190 to 400 m a.s.l. (MAATE 2023).

The unique location of YNP, where Andean rivers flow west to east, forms key tributaries of the upper Amazon. To the north, it is bounded by the Napo River and to the south by the Curaray River (Fig. 1), with a network of rivers (Tivacuno, Tiputini, Yasuní, Nashiño, Cononaco and Tigüino) of white and black waters (Galacatos et al. 2004, Galacatos et al. 1996, Escobar-Camacho et al. 2015). The YNP borders Peru to the east and the Waorani Ethnic Reserve to the west (Pappalardo et al. 2013). The Park's transition from Andean piedmont to lowland floodplains support unique ecosystems, including Evergreen Lowland Forests, Várzea Forests of the Amazonian and Andean alluvial plains, Flooded Palm Forests and Lacustrine-Riparian Grasslands (MAATE 2023, Figs 1, 2). The YNP is home to three indigenous nationalities — Shuar, Kichwa and Waorani — and contains ancestral Waorani territory where two tribes live in voluntary isolation (Pappalardo et al.

2013, Trujillo Montalvo 2018). Critically, YNP boasts high biodiversity, particularly amongst freshwater fishes, which are one of the Park's most diverse vertebrate groups (Bass et al. 2010).

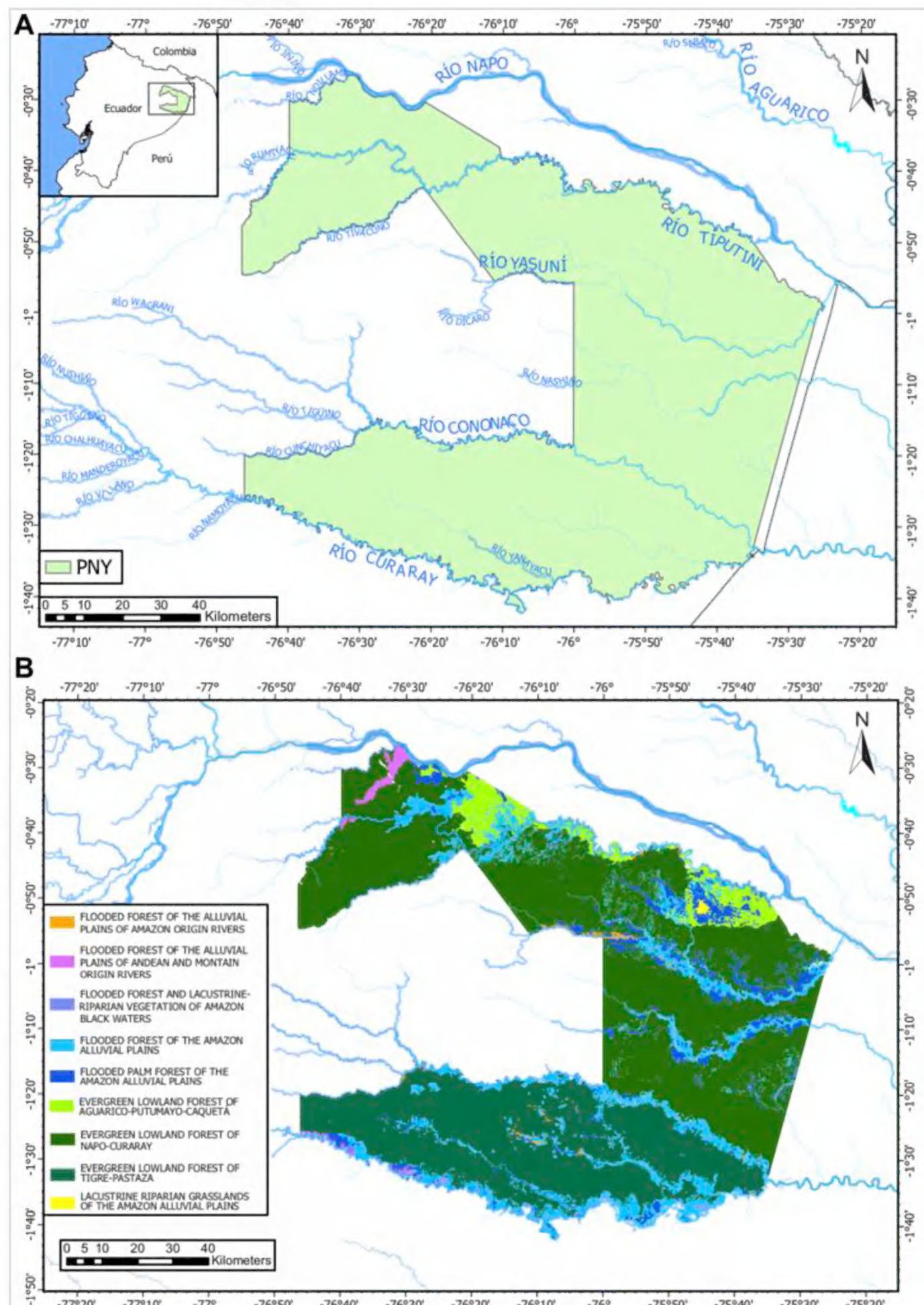


Figure 1. doi

Map of Yasuní National Park showing its location (A) and ecosystems (B).

Fish diversity studies in YNP began in the 1980s with ichthyological explorations of the Napo River Basin, led by the Field Museum of Chicago and Escuela Politécnica Nacional del Ecuador (Stewart et al. 1987, Ibarra and Stewart 1989). Over two decades, research documented 550 freshwater fish species in the Napo River Basin (Barriga 1994, Galacatos et al. 1996, Galacatos et al. 2004), including 253 species within YNP (Barriga 1994). Despite this progress, gaps remain in understanding the full extent of fish diversity, especially given ongoing taxonomic revisions (Valdiviezo-Rivera et al. 2020) and recent discoveries (Valdiviezo-Rivera et al. 2021, Chuctaya et al. 2023) in the region.

This study addresses these gaps by compiling an updated list of fish species occurring in YNP, informed by recent explorations, case studies and data from the two major ichthyological collections of Ecuador. By documenting the freshwater fish diversity of YNP, this work contributes to addressing the global freshwater biodiversity crisis (Reid et al. 2019, Tickner et al. 2020) by providing critical baseline data to provide information for conservation strategies and stakeholders.

Materials and methods

To compile a list of fish species in YNP, an updated database was developed using previous datasets from the Napo Basin of Ecuador and Peru (Barriga 2012, Sanchez et al. 2013, Jézéquel et al. 2020). This database was curated, based on records within YNP boundaries and validated using the ichthyological collections of Ecuadorian museums: Museo de Historia Natural Gustavo Orcés – Escuela Politécnica Nacional (MEPN) and Colección Ictiológica del Instituto Nacional de Biodiversidad, Quito, Ecuador (MECN-DP). These records reflect decades of Amazonian expeditions and curatorial efforts. In addition, digital databases from the Field Museum of Natural History (FMNH) and the Smithsonian National Museum of Natural History (USNM), were verified for species absent in MEPN or MECN-DP. As it is possible that fish species registered outside YNP boundaries occur within the Reserve, for this study, we included records from a 15 km range beyond YNP limits. We did not include records from other protected areas nearby or more geographically distant sites despite any ecological similarities. Finally, species classification and ordering were also updated to current taxonomic revisions of each group according to Eschmeyer's Catalog of Fishes – California Academy of Sciences.

Data resources

Data underpinning this list have been gathered from records from three museum databases and literature. The museum data underpinning the reported list in this study are distributed across three sources: 1) the Darwin Core archive for MECN-DP can be accessed at <https://bndb.sisbioecuador.bio/bndb/checklists/checklist.php?clid=15292&emode=0>, 2) data from the Global Biodiversity Information Facility (GBIF) for MEPN are available at <https://doi.org/10.60545/f12c7w> and 3) data of the fishes of Ecuador at the FMNH and USNM collection pages are available at <https://collections-zoology.fieldmuseum.org/page/collections-data-fishes> and <https://collections.nmnh.si.edu/search>

[/fishes/](#), respectively. The assembled data are available as a single file in the Dryad Data Repository (Escobar-Camacho 2024). This file includes voucher numbers for all species in the 'catalogNumber' column and the names of the museum collections in the 'collectionCode' column. In the checklist below, citations in 'Notes' indicate the literature reporting each species in the YNP area.



Figure 2. [doi](#)

Different water types and ecosystems within YNP. **A** White waters of the Tiputini River (Evergreen Lowland Forest of the Napo-Curaray); **B** Black waters of Lake Añangu (Evergreen Lowland Forest of the Aguarico-Putumayo-Caquetá); **C** Clear water stream (Tiputini River Basin); **D** Flooded forest in the rainy season (Tiputini River Basin); **E** Marsh (Flooded Grassland of the Amazon fluvial plains); **F** Temporary lake of the Flooded Palm Forests, Amazon alluvial plains. Photos: courtesy of Esteban Suárez (A and D) and Kelly Swing (B, C, E and F).

Fish Species Checklist of Yasuni National Park

Order Myliobatiformes

Family Potamotrygonidae

Plesiotrygon iwamae Rosa, Castello & Thorson 1987

Distribution: Ecuador, Peru, Brazil.

Notes: Barriga (1994).

Potamotrygon motoro (Müller & Henle 1841)

Distribution: tropical S.A., east of Andes.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

Potamotrygon scobina Garman 1913

Distribution: Amazonia.

Order Osteoglossiformes

Family Osteoglossidae

Osteoglossum bicirrhosum (Cuvier 1829)

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013).

Family Arapaimidae

Arapaima cf. gigas

Distribution: Amazonia.

Notes: Barriga (1994), WCS (2007), Jácome-Negrete (2013).

Order Clupeiformes

Family Engraulidae

Anchoviella allenii (Myers 1940)

Distribution: Western Amazonia.

Notes: Barriga (1994), Valdiviezo-Rivera et al. (2018).

Anchoviella sp. 1

Distribution: Eastern Ecuador, Limoncocha Lagoon.

Lycengraulis batesii (Günther 1868)

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

Family Pristigasteridae

Ilisha amazonica (Miranda Ribeiro 1920)

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

Pellona castelnaeana Valenciennes 1847

Distribution: Colombia, Ecuador, Peru, Bolivia, Brazil.

Notes: Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Pristigaster cayana Cuvier 1829

Distribution: Colombia, Ecuador, Peru, Brazil.

Notes: Barriga (1994), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Pristigaster whiteheadi Menezes & de Pinna 2000

Distribution: Colombia, Ecuador, Peru, Brazil.

Notes: Galacatos et al. (2004).

Order Characiformes

Family Crenuchidae

Characidium boehlkei Géry 1972

Distribution: Napo River Basin, Ecuador.

Notes: Barriga (1994).

Characidium etheostoma Cope 1872

Distribution: Amazonia.

Notes: Tobes et al. (2022).

Characidium geryi (Zarske 1997)

Distribution: Peru, Ecuador.

Characidium purpuratum Steindachner 1882

Distribution: Tributaries of the upper Amazon in Bolivia, Ecuador and Peru.

Characidium steindachneri Cope 1878

Distribution: Amazonia, Guyanas.

Notes: Tobes et al. (2022).

Characidium sp. 1

Distribution: Eastern Ecuador, Napo River, Yasuní River.

Notes: Stewart et al. 2002, Valdiviezo-Rivera et al. (2018).

Elachocharax pulcher Myers 1927

Distribution: Amazonia, upper Orinoco.

Melanocharacidium rex (Böhlke 1958)

Distribution: South-eastern Ecuador.

***Microcharacidium eleotrioides* (Géry 1960)**

Distribution: Coastal streams (French Guiana, Guyana, Suriname, Bolivia, Brazil, Ecuador and Colombia).

***Odontocharacidium aphanes* (Weitzman & Kanazawa 1977)**

Distribution: Mostly western central Amazonia.

Family Erythrinidae***Erythrinus erythrinus* (Bloch & Schneider 1801)**

Distribution: All Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

***Hoplierythrinus unitaeniatus* (Spix & Agassiz 1829)**

Distribution: All Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

***Hoplias malabaricus* (Bloch 1794)**

Distribution: Widespread Neotropical.

Notes: Barriga (1994), Galacatos et al. (2004), WCS (2007), Jácome-Negrete (2013), Jácome-Negrete et al. (2018), Tobes et al. (2022).

Family Parodontidae***Parodon buckleyi* Boulenger 1887**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Tobes et al. (2022).

***Parodon pongoensis* (Allen 1942)**

Distribution: Western Amazonia.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

Family Cynodontidae

Cynodon gibbus (Spix & Agassiz 1829)

Distribution: All Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

Hydrolycus scomberoides (Cuvier 1819)

Distribution: All Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Rhaphiodon vulpinus Spix & Agassiz 1829

Distribution: All Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Family Serrasalmidae

Colossoma macropomum (Cuvier 1816)

Distribution: All Amazonia, plus northern drainages.

Notes: Barriga (1994) Galacatos et al. (2004), WCS (2007), Jácome-Negrete (2013).

Myleus pacu (Jardine 1841)

Distribution: All Amazonia, plus northern drainages.

Notes: Ibarra and Stewart 1989, Galacatos et al. 1996.

Mylossoma albiscopum (Cope 1872)

Distribution: Widespread Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2020).

Mylossoma aureum (Spix & Agassiz 1829)

Distribution: All Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013), Valdiviezo-Rivera et al. (2020).

***Pygocentrus nattereri* Kner 1858**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete 2013, Escobar-Camacho et al. (2015), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

***Serrasalmus elongatus* Kner 1858**

Distribution: Widespread Amazonia, Orinoco.

Notes: Galacatos et al. (2004).

***Serrasalmus rhombeus* (Linnaeus 1766)**

Distribution: Widespread Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Escobar-Camacho et al. (2015), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018) Jácome-Negrete et al. 2018.

Family Hemiodontidae

***Anodus elongatus* Agassiz 1829**

Distribution: Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Hemiodus microlepis* Kner 1858**

Distribution: Amazonia, Orinoco.

Notes: Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Hemiodus unimaculatus* (Bloch 1794)**

Distribution: Widespread Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004).

Family Anostomidae***Abramites hypselonotus* (Günther 1868)**

Distribution: Widespread Amazonia, Orinoco.

Notes: Barriga (1994).

***Laemolyta garmani* (Borodin 1931)**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Leporellus vittatus* (Valenciennes 1850)**

Distribution: Widespread Amazonia, Orinoco.

Notes: Barriga (1994).

***Leporinus agassizii* Steindachner 1876**

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Leporinus cf. fasciatus

Distribution: Amazonia.

Notes: Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Leporinus friderici* (Bloch 1794)**

Distribution: Widespread Amazonia, Orinoco.

Notes: Barriga (1994), Jácome-Negrete (2013), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

***Leporinus* sp. 1**

Distribution: Manduro and Samona Rivers, right bank of the Napo River, one hour downstream from Francisco de Orellana.

***Leporinus jatuncochi* Ovchynnyk 1971**

Distribution: Napo Basin, Ecuador.

Notes: Barriga (1994).

***Leporinus niceforoi* Fowler 1943**

Distribution: Amazonian Colombia, Ecuador.

Notes: Barriga (1994), Galacatos et al. (2004).

***Leporinus pearsoni* Fowler 1940**

Distribution: Western Amazonia.

Notes: Barriga (1994).

Leporinus cf. striatus

Distribution: Widespread Amazonia.

Notes: Barriga (1994).

***Leporinus subniger* Fowler 1943**

Distribution: Amazonian Colombia, Ecuador.

Megaleporinus cf. trifasciatus

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Pseudanos trimaculatus* (Kner 1858)**

Distribution: Amazonia, plus northern drainages.

Notes: Barriga (1994).

***Schizodon fasciatus* Spix & Agassiz 1829**

Distribution: Widespread Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Family Chilodontidae

Caenotropus labyrinthicus (Kner 1858)

Distribution: Widespread Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Chilodus punctatus Müller & Troschel 1844

Distribution: Widespread Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

Family Curimatidae

Curimata aspera Günther 1868

Distribution: Western Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018).

Curimata cisandina (Allen 1942)

Distribution: Western Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

Curimata knerii Steindachner 1876

Distribution: Middle, upper Amazon.

Notes: Barriga (1994).

Curimata roseni Vari 1989

Distribution: Amazonia, upper Orinoco.

Notes: Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018).

Curimata vittata (Kner 1858)

Distribution: Amazonia, upper Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Curimatella alburnus* (Müller & Troschel 1844)**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Curimatella meyeri* (Steindachner 1882)**

Distribution: Middle, upper Amazon.

Notes: Galacatos et al. (2004)

***Curimatopsis macrolepis* (Steindachner 1876)**

Distribution: Amazon, Orinoco.

Notes: Galacatos et al. (2004).

***Curimatopsis microlepis* Eigenmann & Eigenmann 1889**

Distribution: Amazonia.

***Cyphocharax gouldingi* Vari 1992**

Distribution: Brazil, eastern Ecuador.

***Cyphocharax laticlavius* Vari & Blackledge 1996**

Distribution: Napo, Ecuador.

Notes: Galacatos et al. (2004).

***Cyphocharax notatus* (Steindachner 1908)**

Distribution: Amazonia.

***Cyphocharax pantostictos* Vari & Barriga Salazar 1990**

Distribution: Western Amazonia.

Notes: Barriga (1994).

***Cyphocharax plumbeus* (Eigenmann & Eigenmann 1889)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

***Cyphocharax spiluropsis* (Eigenmann & Eigenmann 1889)**

Distribution: Central, western Amazonia.

Notes: Galacatos et al. (2004).

***Cyphocharax vexillapinnus* Vari 1992**

Distribution: Central, western Amazonia.

***Potamorhina altamazonica* (Cope 1878)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018).

***Potamorhina latior* (Spix & Agassiz 1829)**

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Psectrogaster amazonica* Eigenmann & Eigenmann 1889**

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Psectrogaster rutiloides* (Kner 1858)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

***Steindachnerina bimaculata* (Steindachner 1876)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

***Steindachnerina dobula* (Günther 1868)**

Distribution: Western Amazonia.

Notes: Barriga (1994), Tobes et al. (2022).

***Steindachnerina guentheri* (Eigenmann & Eigenmann 1889)**

Distribution: Western Amazonia, northern drainages.

***Steindachnerina leuciscus* (Günther 1868)**

Distribution: Amazonia.

***Steindachnerina planiventris* Vari & Williams Vari 1989**

Distribution: Central, western Amazonia.

Family Prochilodontidae

***Prochilodus nigricans* Spix & Agassiz 1829**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), WCS (2007), Jácome-Negrete (2013), Escobar-Camacho et al. (2015), Jácome-Negrete et al. (2018).

***Semaprochilodus insignis* (Jardine 1841)**

Distribution: Central, western Amazonia.

Notes: Barriga (1994).

Family Lebiasinidae

***Copeina guttata* (Steindachner 1876)**

Distribution: Central, western Amazonia.

Notes: Barriga (1994).

***Lebiasina elongata* (Boulenger 1887)**

Distribution: Eastern Ecuador and Peru.

Notes: Barriga (1994).

***Nannostomus eques* Steindachner 1876**

Distribution: Middle, upper Amazon.

Notes: Barriga (1994).

***Nannostomus marginatus* Eigenmann 1909**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Barriga (2011).

***Pyrrhulina brevis* Steindachner 1876**

Distribution: Amazonia.

***Pyrrhulina eleanorae* Fowler 1940**

Distribution: Upper Amazon.

***Pyrrhulina obermulleri* Myers 1926**

Distribution: Upper Amazon.

***Pyrrhulina semifasciata* Steindachner 1876**

Distribution: Amazonia.

Notes: Barriga (1994).

***Pyrrhulina zigzag* Zarske & Géry 1997**

Distribution: Upper Amazon.

Family Ctenoluciidae***Boulengerella cuvieri* (Spix & Agassiz 1829)**

Distribution: Amazonia, plus northern drainages.

Notes: Galacatos et al. (2004).

***Boulengerella maculata* (Valenciennes 1850)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Family Triportheidae

***Engraulisoma taeniatum* Castro 1981**

Distribution: Napo Basin, upper Paraguay.

***Triportheus albus* Cope 1872**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Triportheus angulatus* (Spix & Agassiz 1829)**

Distribution: Widespread Amazonia.

Notes: Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Triportheus auritus* (Valenciennes 1850)**

Distribution: Widespread Amazonia.

Notes: Escobar-Camacho et al. (2015).

***Triportheus pictus* (Garman 1890)**

Distribution: Widespread Amazonia.

Notes: Galacatos et al. (2004).

Family Gasteropelecidae

***Carnegiella myersi* Fernández-Yépez 1950**

Distribution: Western Amazonia.

***Carnegiella schereri* Fernández-Yépez 1950**

Distribution: Brazil, western Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Carnegiella strigata* (Günther 1864)**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Gasteropelecus sternicla* (Linnaeus 1758)**

Distribution: Upper/middle Amazonia, Guianas, Paraguay Basin.

Notes: Barriga (1994).

***Thoracocharax securis* (De Filippi 1853)**

Distribution: Upper/middle Amazonia, Guianas, Paraguay Basin.

Notes: Barriga (1994), Galacatos et al. (2004).

***Thoracocharax stellatus* (Kner 1858)**

Distribution: Amazon, Orinoco, Paraná,

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Escobar-Camacho et al. (2015), Jácome-Negrete et al. (2018).

Family Bryconidae***Brycon coxeyi* Fowler 1943**

Distribution: Eastern Ecuador.

***Brycon melanopterus* (Cope 1872)**

Distribution: Amazonia.

Notes: Barriga (1994), WCS (2007).

***Brycon pesu* Müller & Troschel 1845**

Distribution: Amazonia, plus northern drainages.

***Salminus hilarii* Valenciennes 1850**

Distribution: Western and south-eastern Amazonia.

Notes: Galacatos et al. (2004)

Family Iguanodectidae***Bryconops alburnoides* Kner 1858**

Distribution: Amazonia, Orinoco.

***Bryconops caudomaculatus* (Günther 1864)**

Distribution: Amazonia, plus northern drainages.

***Iguanodectes spilurus* (Günther 1864)**

Distribution: Amazonia, Orinoco.

Notes: Escobar-Camacho et al. (2015).

***Piabucus melanostoma* Holmberg 1891**

Distribution: South-western Amazonia, Paraguay Basin.

Family Acestrorhynchidae***Acestrorhynchus abbreviatus* (Cope 1878)**

Distribution: Western and south-western Amazonia.

Notes: Galacatos et al. (2004).

***Acestrorhynchus falcatus* (Bloch 1794)**

Distribution: Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

***Acestrorhynchus falcirostris* (Cuvier 1819)**

Distribution: Amazonia, plus northern drainages.

Notes: Galacatos et al. (2004).

***Acestrorhynchus microlepis* (Jardine 1841)**

Distribution: Amazonia, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

***Gnathocharax steindachneri* Fowler 1913**

Distribution: Amazonia, Orinoco.

Family Stevardiidae***Boehlkea orcesi* (Böhlke 1958)**

Distribution: Eastern Ecuador.

***Bryconacidnus ellisae* (Pearson 1924)**

Distribution: Upper Amazon.

Notes: Barriga (1994).

***Bryconacidnus paipayensis* (Pearson 1929)**

Distribution: Upper Amazon.

***Chrysobrycon hesperus* (Böhlke 1958)**

Distribution: Napo River Basin.

Notes: Valdiviezo-Rivera et al. (2018).

***Creagrutus amoenus* Fowler 1943**

Distribution: Western Ecuador, south-eastern Colombia.

Notes: Tobes et al. (2022).

***Creagrutus barrigai* Vari & Harold 2001**

Distribution: Eastern Ecuador, north-eastern Peru.

***Creagrutus cochui* Géry 1964**

Distribution: Western Amazonia.

***Creagrutus flavescens* Vari & Harold 2001**

Distribution: Andean piedmont, western Amazonia.

***Creagrutus gephyrus* Böhlke & Saul 1975**

Distribution: Eastern Ecuador, north-eastern Peru.

Notes: Barriga (1994).

***Creagrutus gracilis* Vari & Harold 2001**

Distribution: Eastern Ecuador, north-eastern Peru.

***Creagrutus* sp. 1**

Distribution: Eastern Ecuador, Sunka stream, tributary of Tiputini River.

Notes: Valdiviezo-Rivera et al. (2018).

***Creagrutus* sp. 2**

Distribution: Eastern Ecuador, unnamed stream tributary of Divaro River.

***Gephyrocharax major* Myers 1929**

Distribution: South-western Amazonia.

***Knodus breviceps* (Eigenmann 1908)**

Distribution: Eastern Peru.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

Knodus* cf. *caquetae

Distribution: Amazon, Caquetá.

***Knodus delta* Géry 1972**

Distribution: Eastern Ecuador.

Notes: Barriga (2011).

***Knodus gamma* Géry 1972**

Distribution: Eastern Ecuador.

Notes: Barriga (1994), Barriga (2011).

***Knodus megalops* Myers 1929**

Distribution: Amazonia.

Tyttocharax cf. cochui

Distribution: Amazonia.

***Tyttocharax madeirae* Fowler 1913**

Distribution: Amazon tributaries.

***Xenobrycon heterodon* Weitzman & Fink 1985**

Distribution: Upper Amazon.

Notes: Barriga (1994).

Family Characidae***Acstrocephalus boehlkei* Menezes 1977**

Distribution: Upper Amazon.

Notes: Barriga (1994), Galacatos et al. (2004).

***Acstrocephalus sardina* (Fowler 1913)**

Distribution: Western Amazon, Orinoco.

***Aphyocharax pusillus* Günther 1868**

Distribution: South-western Amazonia.

Notes: Barriga (1994), Barriga (2011), Escobar-Camacho et al. (2015), Valdiviezo-Rivera et al. (2018).

***Charax caudimaculatus* Lucena 1987**

Distribution: South-western Amazonia.

Notes: Galacatos et al. (2004), Escobar-Camacho et al. (2015).

Charax cf. michaeli

Distribution: South-western Amazonia.

***Charax tectifer* (Cope 1870)**

Distribution: Upper Amazon.

Notes: Jácome-Negrete et al. (2018).

***Cynopotamus amazonum* (Günther 1868)**

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Escobar-Camacho et al. (2015).

***Galeocharax gulo* (Cope 1870)**

Distribution: Widespread Amazonia.

***Heterocharax macrolepis* Eigenmann 1912**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Barriga (2011).

***Leptagoniates steindachneri* Boulenger 1887**

Distribution: Amazonia.

Notes: Barriga (1994).

***Odontostilbe ecuadorensis* Bührnheim & Malabarba 2006**

Distribution: Eastern Ecuador, Napo River Basin in Peru.

***Odontostilbe fugitiva* Cope 1870**

Distribution: Western Amazonia.

***Odontostilbe roloffi* Géry 1972**

Distribution: Napo Basin in Ecuador.

Notes: Barriga (1994).

***Paragoniates alburnus* Steindachner 1876**

Distribution: Middle and upper Amazonia.

Notes: Barriga (1994).

***Phenacogaster pectinata* (Cope 1870)**

Distribution: Middle and upper Amazonia.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Prionobrama filigera* (Cope 1870)**

Distribution: Amazonia.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Roeboides dispar* Lucena 2001**

Distribution: South-western Amazonia.

***Roeboides myersii* Gill 1870**

Distribution: Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018).

***Tetragonopterus argenteus* Cuvier 1816**

Distribution: Amazon, Orinoco, Paraguay.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Escobar-Camacho et al. (2015), Jácome-Negrete et al. (2018), Valdiviezo-Rivera et al. (2018).

***Tetragonopterus chalceus* Spix & Agassiz 1829**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004).

Family Acestrorhaphidae***Astyanax abramis* (Jenyns 1842)**

Distribution: Upper Amazon.

Notes: Barriga (1994), Valdiviezo-Rivera et al. (2018).

***Astyanax bimaculatus* (Linnaeus 1758)**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Valdiviezo-Rivera et al. (2018).

***Astyanax bourgeti* Eigenmann 1908**

Distribution: Upper Amazon.

***Astyanax maximus* (Steindachner 1876)**

Distribution: Upper Amazon, Orinoco.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Astyanax* sp. 1**

Distribution: Eastern Ecuador, unnamed river tributary of the Dicaro and Yasuní Rivers.

***Bario steindachneri* (Eigenmann 1893)**

Distribution: Amazonia.

Notes: Barriga (1994).

***Bario oligolepis* (Günther 1864)**

Distribution: Amazon, plus northern drainages.

Notes: Escobar-Camacho et al. (2015), Valdiviezo-Rivera et al. (2018), Tóbes et al. (2022).

***Brachychalcinus nummus* Böhlke 1958**

Distribution: Upper Amazon.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Bryconella pallidifrons* (Fowler 1946)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

***Ctenobrycon hauxwellianus* (Cope 1870)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004), Escobar-Camacho et al. (2015), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

***Gymnocorymbus thayeri* Eigenmann 1908**

Distribution: Western Amazonia, plus northern drainages.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Hemigrammus bellottii* (Steindachner 1882)**

Distribution: Western Amazonia.

***Hemigrammus colletti* (Steindachner 1882)**

Distribution: Amazon, plus northern drainages.

***Hemigrammus coeruleus* Durbin 1908**

Distribution: Western Amazonia.

***Hemigrammus cupreus* Durbin 1918**

Distribution: Western Amazonia.

Notes: Galacatos et al. (2004).

***Hemigrammus hyanuary* Durbin 1918**

Distribution: Amazonia.

***Hemigrammus levis* Durbin 1908**

Distribution: Amazonia.

***Hemigrammus luelingi* (Géry 1964)**

Distribution: Eastern Ecuador, eastern Peru.

Notes: Galacatos et al. (2004).

***Hemigrammus lunatus* Durbin 1918**

Distribution: Amazon, Orinoco, Paraguay.

Notes: Barriga (1994), Galacatos et al. (2004).

Hemigrammus cf. marginatus

Distribution: Amazonia, Orinoco.

Notes: Barriga (2012).

***Hemigrammus megaceps* Fowler 1945**

Distribution: Eastern Ecuador, eastern Peru.

***Hemigrammus pretoensis* Géry 1965**

Distribution: Upper Amazon.

Notes: Barriga (2012).

***Hemigrammus unilineatus* (Gill 1858)**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004), Valdiviezo-Rivera et al. (2021).

***Holopristis ocellifera* (Steindachner 1882)**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004).

***Holopristis pulchra* (Ladiges 1938)**

Distribution: Upper Amazon.

Notes: Barriga (2012).

***Hypessobrycon agulha* Fowler 1913**

Distribution: Western, south-western Amazonia.

***Hypessobrycon gracilior* Géry 1964**

Distribution: Upper Amazon.

***Hypessobrycon loretoensis* Ladiges 1938**

Distribution: Upper Amazon.

***Hypessobrycon tenuis* Géry 1964**

Distribution: Upper Amazon.

***Hypessobrycon* sp. 1**

Distribution: Eastern Ecuador, ravine Cotoyacu, confluence with Yasuni River.

Notes: Galacatos et al. (2004).

***Hypessobrycon* sp. 2**

Distribution: Eastern Ecuador, Yasuní River at the confluence with Jatuncocha Lagoon.

***Jupiaba anteroides* (Géry 1965)**

Distribution: Upper Amazon.

***Jupiaba asymmetrica* (Eigenmann 1908)**

Distribution: Upper Amazon.

Notes: Barriga (1994).

***Jupiaba zonata* (Eigenmann 1908)**

Distribution: Upper Amazon, Rio Negro.

***Megalamphodus copelandi* (Durbin 1908)**

Distribution: Upper Amazon.

Notes: Barriga (1994), Galacatos et al. (2004), Escobar-Camacho et al. (2015).

***Megalamphodus bentosi* (Durbin 1908)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

***Moenkhausia chrysargyrea* (Günther 1864)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994).

***Moenkhausia comma* Eigenmann 1908**

Distribution: Amazonia.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

Moenkhausia aff. copei

Distribution: Amazonia, Orinoco.

Notes: Escobar-Camacho et al. (2015).

***Moenkhausia cotinho* Eigenmann 1908**

Distribution: Amazonia

Notes: Galacatos et al. (2004), Escobar-Camacho et al. (2015).

Moenkhausia cf. dichroura

Distribution: Amazon, Orinoco, Paraguay.

Notes: Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018), Tobes et al. (2022).

***Moenkhausia grandisquamis* Müller & Troschel, 1845**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Escobar-Camacho et al. (2015).

***Moenkhausia latissima* Eigenmann 1908**

Distribution: Upper Amazon.

***Moenkhausia lepidura* (Kner 1858)**

Distribution: Amazon, plus northern drainages.

Notes: Tobes et al. (2022).

***Moenkhausia naponis* Böhlke 1958**

Distribution: Eastern Ecuador.

Notes: Barriga (1994).

***Moenkhausia ovalis* (Günther 1868)**

Distribution: Upper Amazon.

***Moenkhausia simulata* (Eigenmann 1924)**

Distribution: Upper Amazon.

***Poptella compressa* (Günther 1864)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

***Psalidodon henseli* (de Melo & Buckup 2006)**

Notes: Valdiviezo-Rivera et al. (2018), Tobes et al. (2022).

***Stethaprion erythrops* Cope 1870**

Distribution: Upper Amazon.

Notes: Barriga (1994), Galacatos et al. (2004).

***Thayeria obliqua* Eigenmann 1908**

Distribution: Western and southern Amazonia.

Notes: Barriga (1994).

***Tytto'brycon hamatus* Géry 1973**

Distribution: Amazonia.

Order Gymnotiformes**Family Apteronotidae*****Adontosternarchus balaenops* (Cope 1878)**

Distribution: Upper Amazon.

***Adontosternarchus clarkae* Mago-Leccia, Lundberg & Baskin 1985**

Distribution: Amazonia, Orinoco.

Notes: Barriga (1994).

***Apteronotus albifrons* (Linnaeus 1766)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Apteronotus apurensis* Fernández-Yépez 1968**

Distribution: Orinoco drainage.

***Apteronotus bonapartii* (Castelnau 1855)**

Distribution: Amazon, larger rivers.

Porotergus cf. duende

Distribution: Western Amazonia, larger rivers.

***Sternarchorhynchus curvirostris* (Boulenger 1887)**

Distribution: Eastern Ecuador, north-eastern Peru.

Notes: Barriga (1994), Guarderas and Jácome-Negrete (2013).

Sternarchorhynchus cf. oxyrhynchus

Distribution: Amazon, plus northern drainages.

Family Sternopygidae

Distocyclus conirostris (Eigenmann & Allen 1942)

Distribution: Amazonia, Orinoco.

Eigenmannia cf. *limbata*

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004).

Eigenmannia cf. *virescens*

Distribution: Widespread Amazonia, La Plata.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Rhabdolichops eastwardi Lundberg & Mago-Leccia 1986

Distribution: Amazonia, Orinoco.

Sternopygus macrurus (Bloch & Schneider 1801)

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

Family Gymnotidae

Electrophorus varii de Santana, Wosiacki, Crampton, Sabaj, Dillman, Mendes-Júnior & Castro e C. 2019

Distribution: Western and central Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Gymnotus carapo Linnaeus, 1758

Distribution: Mexico to Paraguay.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Gymnotus coatesi* LaMonte 1935**

Distribution: Widespread Amazonia, western piedmont tributaries to main channel.

Notes: Barriga (1994).

***Gymnotus* sp. 1**

Distribution: Eastern Ecuador, Tambococha ravine.

Family Hypopomidae

***Brachyhypopomus beebei* (Schultz 1944)**

Distribution: Western Amazonia.

Notes: Galacatos et al. (1996).

***Brachyhypopomus brevirostris* (Steindachner 1868)**

Distribution: Western Amazonia, Orinoco, La Plata.

***Brachyhypopomus bennetti* Sullivan, Zuanon & Cox Fernandes 2013**

Distribution: Amazonia.

***Brachyhypopomus pinnicaudatus* (Hopkins, Comfort, Bastian & Bass 1990)**

Distribution: Amazon, plus northern drainages, La Plata.

***Brachyhypopomus regani* Crampton, de Santana, Waddell & Lovejoy 2017**

Distribution: Amazon, plus northern drainages.

***Brachyhypopomus walteri* Sullivan, Zuanon & Cox Fernandes 2013**

Distribution: Amazonia.

Family Rhamphichthyidae***Gymnorhamphichthys hypostomus* Ellis 1912**

Distribution: Western Amazonia, Orinoco.

Notes: Barriga (1994), Guarderas and Jácome-Negrete (2013).

***Gymnorhamphichthys* sp. 1**

Distribution: Eastern Ecuador, Coronaco River, close to the community Bameno.

***Hypopygus lepturus* Hoedeman 1962**

Distribution: Amazonia, Orinoco, Guianas.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Steatogenys elegans* (Steindachner 1880)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Galacatos et al. (2004).

Order Siluriformes**Family Trichomycteridae*****Henonemus punctatus* (Boulenger 1887)**

Distribution: Amazonia.

Notes: Barriga (1994), Barriga (2011).

***Ochmacanthus reinhardtii* (Steindachner 1882)**

Distribution: Amazon, plus northern drainages.

***Ochmacanthus* sp. 1**

Distribution: Eastern Ecuador, Yasuni River, confluence with Jatuncocha River.

***Paracanthopoma parva* Giltay 1935**

Distribution: Amazonia.

Notes: Barriga (1994).

***Paravandellia* sp. 1**

Distribution: Eastern Ecuador, Jatuncocha lagoon.

***Plectrochilus wieneri* (Pellegrin 1909)**

Distribution: Napo Basin in Ecuador.

Notes: Barriga (1994).

***Pseudostegophilus nemurus* (Günther 1869)**

Distribution: Amazonia.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Schultzichthys bondi* (Myers 1942)**

Distribution: Amazonia, Orinoco.

Notes: Barriga (1994), Barriga (2011).

***Tridens melanops* Eigenmann & Eigenmann 1889**

Distribution: Western and central Amazonia.

***Tridentopsis pearsoni* Myers 1925**

Distribution: Western, south-western Amazonia.

Notes: Galacatos et al. (2004).

***Vandellia cirrhosa* Valenciennes 1846**

Distribution: Widespread Amazonia.

Notes: Barriga (2011).

Family Callichthyidae

***Brochis ambiacus* (Cope 1872)**

Distribution: Upper Amazon

Notes: Barriga (1994), Guarderas and Jácome-Negrete (2013).

***Brochis arcuatus* (Elwin 1938)**

Distribution: South America: Upper Amazon River Basin.

***Brochis leopardus* (Myers 1933)**

Distribution: Western Amazonia.

***Brochis splendens* (Castelnau 1855)**

Distribution: Amazonia.

***Callichthys callichthys* (Linnaeus 1758)**

Distribution: Widespread Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Corydoras acutus* Cope 1872**

Distribution: Eastern Ecuador, north-eastern Peru, southern Brazil.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Dianema longibarbis* Cope 1872**

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

***Gastrodermus elegans* (Steindachner 1876)**

Distribution: Upper Amazon.

Notes: Barriga (1994).

***Gastrodermus napoensis* (Nijssen & Isbrücker 1986)**

Distribution: Eastern Ecuador, north-eastern Peru.

***Hoplisoma armatum* (Günther 1868)**

Distribution: Upper Amazon.

***Hoplisoma leucomelas* (Eigenmann & Allen 1942)**

Distribution: Upper Amazon.

Hoplisoma cf. loretoense

Distribution: Upper Amazon.

***Hoplisoma trilineatum* (Cope 1872)**

Distribution: Amazon, plus northern drainages.

Hoplisoma cf. melini

Distribution: Eastern Ecuador, south-eastern Colombia, Rio Negro.

***Hoplosternum littorale* (Hancock 1828)**

Distribution: Widespread Amazonia.

Notes: Galacatos et al. (2004), Barriga (2011).

***Megalechis thoracata* (Valenciennes 1840)**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004).

***Osteogaster aenea* (Gill 1858)**

Distribution: Widespread Amazonia, La Plata.

Notes: Guarderas and Jácome-Negrete (2013).

***Osteogaster eques* (Steindachner 1876)**

Distribution: Amazonia.

***Osteogaster rabauti* (LaMonte 1941)**

Distribution: Upper Amazon.

Family Loricariidae***Ancistrus alga* (Cope 1872)**

Distribution: Amazon, plus northern drainages, Paraguay.

Notes: Galacatos et al. (2004).

***Ancistrus malacops* (Cope 1872)**

Notes: Tobes et al. (2022).

***Aphanotorulus unicolor* (Steindachner 1908)**

Distribution: Upper Amazon.

Notes: Barriga (2011), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Chaetostoma branickii* Steindachner 1881**

Distribution: Marañon River basin, Ecuador and Peru.

***Chaetostoma microps* Günther 1864**

Notes: Tobes et al. (2022).

***Farlowella kneri* (Steindachner 1882)**

Distribution: Upper Amazon, Napo, Pastaza.

Notes: Guarderas and Jácome-Negrete (2013).

***Farlowella nattereri* Steindachner 1910**

Distribution: Upper Amazon, Essequibo.

Notes: Barriga (2011).

***Farlowella odontotumulus* Retzer & Page 1997**

Distribution: Eastern Ecuador, Venezuela.

***Farlowella oxyrryncha* (Kner 1853)**

Distribution: Amazonia, Orinoco.

***Hypoptopoma thoracatum* Günther 1868**

Distribution: Amazonia.

Notes: Barriga (2011).

***Hypoptopoma gulare* Cope 1878**

Distribution: Amazonia.

***Hypoptopoma* sp. 1**

Distribution: Eastern Ecuador, Yasuní River, confluence with Jatuncocha River.

Notes: Jácome-Negrete et al. (2018).

***Hypostomus ericius* Armbruster 2003**

Distribution: Upper Amazon.

***Hypostomus hemicochliodon* Armbruster 2003**

Distribution: Upper Amazon, upper Orinoco, upper Rio Negro.

Notes: Tobes et al. (2022).

***Hypostomus ocaleus* (Fowler 1943)**

Distribution: North-western Amazon.

Notes: Barriga (2011).

***Hypostomus pyrineusi* (Miranda Ribeiro 1920)**

Distribution: South-western Amazon.

***Hypostomus* sp. 1**

Distribution: Eastern Ecuador, pond Sachacocha, affluent of Jatuncocha River.

Notes: Galacatos et al. (2004).

***Lamontichthys filamentosus* (LaMonte 1935)**

Distribution: Western Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011).

Lasiancistrus cf. heteracanthus

Distribution: Rio Napo, Ecuador and Peru.

***Lasiancistrus schomburgkii* (Günther 1864)**

Distribution: Amazon, plus northern drainages.

Notes: Tobes et al. (2022).

***Limatulichthys griseus* (Eigenmann 1909)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994), Barriga (2011).

***Loricaria cataphracta* Linnaeus 1758**

Distribution: Amazon, plus northern drainages

***Loricaria clavipinna* Fowler 1940**

Distribution: Amazonia.

Notes: Guarderas and Jácome-Negrete (2013).

***Loricaria simillima* Regan 1904**

Distribution: Amazonia, Orinoco, La Plata.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Loricariichthys cashibo* (Eigenmann & Allen 1942)**

Distribution: Upper Amazon.

***Loricariichthys hauxwelli* Fowler 1915**

Distribution: South-eastern Ecuador, north-eastern Peru.

***Nannoptopoma spectabile* (Eigenmann 1914)**

Distribution: Amazonia, Orinoco.

***Nannoptopoma sternoptychum* Schaefer 1996**

Distribution: Upper Amazon.

***Otocinclus batmani* Lehmann A. 2006**

Distribution: Disjunct patches in western Amazon.

***Otocinclus huaorani* Schaefer 1997**

Distribution: Upper Amazon, Orinoco.

Notes: Galacatos et al. (2004), Barriga (2011).

***Otocinclus macrospilus* Eigenmann & Allen 1942**

Distribution: Amazonia.

Notes: Galacatos et al. (2004) .

Otocinclus cf. hoppei

Distribution: Easternn Ecuador, Jatuncocha Lake.

***Panaqolus albomaculatus* (Kanazawa 1958)**

Distribution: Upper Napo, eastern Peru.

Notes: Barriga (1994), Barriga (2011).

***Panaqolus dentex* (Günther 1868)**

Distribution: Napo, eastern Ecuador, eastern Peru.

Notes: Provenzano-Rizzi et al. (2024).

***Panaqolus nocturnus* (Schaefer & Stewart 1993)**

Distribution: Napo drainage, Ecuador.

Notes: Barriga (2011).

***Panaqolus orcesi* Provenzano, Barriga-Salazar & Stewart 2024**

Distribution: Ecuadorian Amazon.

Notes: Provenzano-Rizzi et al. (2024).

***Panaque nigrolineatus* (Peters 1877)**

Distribution: Amazonia, Orinoco.

Notes: Barriga (1994), Barriga (2011).

***Panaque schaeferi* Lujan, Hidalgo & Stewart 2010**

Distribution: Upper Amazon.

Notes: Lujan et al. (2010).

***Panaque titan* Lujan, Hidalgo & Stewart 2010**

Distribution: Napo Basin, Ecuador.

Notes: Lujan et al. (2010).

***Peckoltia bachi* (Boulenger 1898)**

Distribution: Upper Amazon.

***Peckoltia furcata* (Fowler 1940)**

Distribution: Upper Amazon.

Notes: Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Planiloricaria cryptodon* (Isbrücker 1971)**

Distribution: Upper Amazonia.

***Pseudohemiodon apithanos* Isbrücker & Nijssen 1978**

Distribution: Western Amazonia.

Notes: Barriga (1994).

***Pseudohemiodon lamina* (Günther 1868)**

Distribution: Upper Amazon.

Notes: Provenzano-Rizzi and Barriga-Salazar (2020).

***Pterygoplichthys gibbiceps* (Kner 1854)**

Distribution: Middle and upper Amazon, Orinoco.

***Pterygoplichthys pardalis* (Castelnau 1855)**

Distribution: Widespread Amazonia.

Notes: WCS (2007), Valdiviezo-Rivera et al. (2018).

***Pterygoplichthys punctatus* (Kner 1854)**

Distribution: Western Amazonia.

***Pterygoplichthys weberi* Armbruster & Page 2006**

Distribution: Upper Amazon of Colombia, Ecuador, Peru.

Notes: Valdiviezo-Rivera et al. (2018).

***Rhadinotoricaria condei* (Isbrücker & Nijssen 1986)**

Distribution: Napo Basin, Ecuador.

***Rhadinotoricaria macromystax* (Günther 1869)**

Distribution: Eastern Peru and Ecuador.

Notes: Barriga (1994).

***Rineloricaria lanceolata* (Günther 1868)**

Distribution: Upper Amazon.

Notes: Barriga (1994).

***Rineloricaria morrowi* Fowler 1940**

Distribution: Upper Amazon of Ecuador, Peru.

***Spatuloricaria puganensis* (Pearson 1937)**

Distribution: Upper Amazon of Ecuador, Peru.

***Sturisoma guentheri* (Regan 1904)**

Distribution: Upper Amazon.

Notes: Galacatos et al. (2004).

***Sturisoma nigrirostrum* Fowler 1940**

Distribution: Upper Amazon of Ecuador, Peru.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

Family Cetopsidae***Cetopsis candiru* Spix & Agassiz 1829**

Distribution: Amazonia.

Notes: Barriga (2011).

***Cetopsis coecutiens* (Lichtenstein 1819)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Cetopsis oliveirai* (Lundberg & Rapp Py-Daniel 1994)**

Distribution: Middle and upper Amazon.

***Cetopsis plumbea* Steindachner 1882**

Distribution: Upper Amazon.

***Denticetopsis seducta* Vari, Ferraris & de Pinna 2005**

Distribution: Amazon, Orinoco.

***Helogenes marmoratus* Günther 1863**

Distribution: Amazon, plus northern drainages.

Notes: Guarderas and Jácome-Negrete (2013).

Family Aspredinidae

Bunocephalus coracoideus (Cope 1874)

Distribution: Amazonia.

Notes: Guarderas and Jácome-Negrete (2013).

Bunocephalus knerii Steindachner 1882

Distribution: Western Amazonia.

Bunocephalus verrucosus (Walbaum 1792)

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004).

Ernstichthys intonsus Stewart 1985

Distribution: Napo Basin, Ecuador.

Notes: Barriga (1994).

Micromyzon akamai Friel & Lundberg 1996

Distribution: Amazon, Madeira, Napo, main channel and direct tributaries.

Notes: Chuctaya et al. (2021).

Pseudobunocephalus amazonicus (Mees 1989)

Distribution: Upper and middle Amazon.

Pseudobunocephalus bifidus (Eigenmann 1942)

Distribution: Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004).

Pterobunocephalus depressus (Haseman 1911)

Distribution: Amazon, Orinoco, Paraguay Basins.

***Xyliphius lepturus* Orcés V. 1962**

Distribution: Upper Amazon, Orinoco.

Notes: Barriga (1994).

***Xyliphius melanopterus* Orcés V. 1962**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994).

Family Auchenipteridae***Ageneiosus inermis* (Linnaeus 1766)**

Distribution: Most of S.A. east of the Andes.

Notes: Galacatos et al. (2004), Barriga (2011).

***Ageneiosus vittatus* Steindachner 1908**

Distribution: Middle Orinoco, upper Amazon.

Notes: Galacatos et al. (2004) .

***Auchenipterichthys coracoideus* (Eigenmann & Allen 1942)**

Distribution: Upper Amazon.

Auchenipterichthys cf. thoracatus

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

***Auchenipterus ambyiacus* Fowler 1915**

Distribution: Upper and middle Amazon, plus northern drainages.

Notes: Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013).

***Auchenipterus brachyurus* (Cope 1878)**

Distribution: Upper Amazon.

Auchenipterus cf. nuchalis

Distribution: Widespread Amazon, plus northern drainages.

Notes: Barriga (1994).

***Centromochlus heckelii* (De Filippi 1853)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011).

***Duringlanis altae* (Fowler 1945)**

Distribution: South-eastern Colombia, eastern Ecuador.

Notes: Barriga (1994).

***Duringlanis perugiae* (Steindachner 1882)**

Distribution: Upper Amazon.

Notes: Barriga (1994).

***Tatia dunni* (Fowler 1945)**

Distribution: South-eastern Colombia, eastern Ecuador, central Brazil.

Notes: Galacatos et al. (2004).

***Tatia intermedia* (Steindachner 1877)**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004), Barriga (2011), Guarderas and Jácome-Negrete (2013).

***Trachelyopterus galeatus* (Linnaeus 1766)**

Distribution: Amazon, plus northern drainages.

Notes: Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018).

***Tympanopleura atronasus* (Eigenmann & Eigenmann 1888)**

Distribution: Middle and upper Amazon.

Family Doradidae

Acanthodoras spinosissimus (Eigenmann & Eigenmann 1888)

Distribution: Amazon, Essequibo.

Agamyxis pectinifrons (Cope 1870)

Distribution: Amazonia.

Notes: Galacatos et al. (2004).

Amblydoras affinis (Kner 1855)

Notes: Galacatos et al. (2004).

Amblydoras monitor (Cope 1872)

Distribution: Upper Amazon.

Amblydoras nauticus (Cope 1874)

Distribution: Upper Amazon.

Anadoras grypus (Cope 1872)

Distribution: Upper Amazon.

Notes: Galacatos et al. (2004).

Hemidoras morrisi Eigenmann 1925

Distribution: Upper Amazon.

Leptodoras acipenserinus (Günther 1868)

Distribution: Upper Amazon of Ecuador, Peru, Brazil.

Notes: Barriga (1994).

Leptodoras cf. catanai

Distribution: Napo River Basin, at the locality of Pompeya, sandy island in centre of river.

***Megalodoras uranoscopus* (Eigenmann & Eigenmann 1888)**

Distribution: Amazon, Essequibo.

***Nemadoras elongatus* (Boulenger 1898)**

Distribution: Amazonia.

***Nemadoras humeralis* (Kner 1855)**

Distribution: Amazonia.

Notes: Galacatos et al. (2004), Barriga (2011).

***Ossancora punctata* (Kner 1855)**

Distribution: Western, south-western Amazon.

Notes: Barriga (1994).

***Physopyxis ananas* Sousa & Rapp Py-Daniel 2005**

Distribution: Amazon, Essequibo.

Notes: Galacatos et al. (2004).

***Platydoras armatus* (Valenciennes 1840)**

Distribution: Widespread Amazon.

Notes: Galacatos et al. (2004).

***Pterodoras granulosus* (Valenciennes 1821)**

Distribution: Amazon, Guianas, Paraná.

Tenellus cf. ternetzi

Distribution: Amazon, Orinoco, Essequibo.

***Tenellus trimaculatus* (Boulenger 1898)**

Distribution: Amazon, Orinoco.

Family Heptapteridae***Cetopsorhamdia orinoco* Schultz 1944**

Distribution: Orinoco River Basin, Ecuador, Colombia and Venezuela.

***Brachyrhamdia marthae* Sands & Black 1985**

Distribution: Brazil, Ecuador, Bolivia and Peru.

Notes: Galacatos et al. (2004).

***Gladioglanis conquistador* Lundberg, Bornbusch & Mago-Leccia 1991**

Distribution: Ravine Cotoyacu, downstream from the confluence of the Yasuni River.

Notes: Galacatos et al. (2004).

***Imparfinis longicauda* (Boulenger 1887)**

Distribution: Bobonaza River Basin in upper Partaza River drainage in Ecuador and Rio Corrente in Brazil.

***Imparfinis nemacheir* (Eigenmann & Fisher 1916)**

Distribution: Upper Amazon and Orinoco River Basins and Lake Maracaibo Basin: Ecuador, Colombia, Peru and Venezuela.

***Myoglanis* sp. 1**

Distribution: Laguna Azul, near the confluence of the Chambira and Tiputini Rivers.

***Pariolius armillatus* Cope 1872**

Distribution: Upper Amazon.

Notes: Barriga (1994).

Pimelodella aff. gracilis

Distribution: Amazon, Orinoco, La Plata.

***Pimelodella lateristriga* (Lichtenstein 1823)**

Distribution: Southern Amazon.

Notes: Tobes et al. (2022).

***Pimelodella* sp. 1**

Distribution: Eastern Ecuador, Tiputini River.

***Pimelodella cristata* (Müller & Troschel 1849)**

Distribution: Amazon and Orinoco River Basins and coastal rivers of north-eastern Brazil (Bolivia, Colombia, Ecuador, French Guiana, Guyana and Peru).

***Pimelodella cyanostigma* (Cope 1870)**

Distribution: South America: upper Amazon Basin (Ecuador and Peru).

***Rhamdia poeyi* Eigenmann & Eigenmann 1888**

Distribution: Mamoré, upper Napo and Tocantins River Basins: Bolivia, Brazil and Ecuador.

***Rhamdia quelen* (Quoy & Gaimard 1824)**

Distribution: Mexico to Argentina.

Family Pimelodidae

***Aguarunichthys torosus* Stewart 1986**

Distribution: Amazon River drainage (Ecuador, Peru and Bolivia).

***Brachyplatystoma filamentosum* (Lichtenstein 1819)**

Distribution: Amazon, plus northern drainages.

Notes: Barriga (1994).

***Brachyplatystoma juruense* (Boulenger 1898)**

Distribution: Amazon, Orinoco.

***Brachyplatystoma platynema* Boulenger 1898**

Distribution: Amazon, Orinoco.

***Brachyplatystoma tigrinum* (Britski 1981)**

Distribution: Amazon.

***Calophysus macropterus* (Lichtenstein 1819)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), WCS (2007), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Cheirocerus eques* Eigenmann 1917**

Distribution: Amazon.

Notes: Barriga (1994).

***Cheirocerus goeldii* (Steindachner 1908)**

Distribution: South-western Amazonia.

***Hemisorubim platyrhynchos* (Valenciennes 1840)**

Distribution: Widespread Amazon.

Notes: Barriga (1994), Galacatos et al. (2004).

***Hypophthalmus edentatus* Spix & Agassiz 1829**

Distribution: Amazon, plus northern drainages.

Notes: Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Megalonema platycephalum* Eigenmann 1912**

Distribution: Amazon, Orinoco, Essequibo.

***Phractocephalus hemioliopterus* (Bloch & Schneider 1801)**

Distribution: Widespread Amazon.

***Pimelodus altissimus* Eigenmann & Pearson 1942**

Distribution: Amazon.

***Pimelodus blochii* Valenciennes 1840**

Distribution: Amazon, Orinoco, Essequibo.

Notes: Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Pimelodus jivaro* Eigenmann & Pearson 1942**

Distribution: Upper Amazon of Ecuador, Peru.

***Pimelodus ornatus* Kner 1858**

Distribution: Amazon, plus northern drainages, Paraná.

Notes: Barriga (1994).

***Pimelodus pictus* Steindachner 1876**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994).

***Pimelodus* sp. 1**

Distribution: Napo River, next to Tiputini military detachment.

***Pimelodus* sp. 2**

Distribution: Napo River, Ananguocha Lagoon.

***Pinirampus pirinampu* (Spix & Agassiz 1829)**

Distribution: Amazon, Orinoco, Essequibo, Paraná.

Notes: Barriga (1994), Galacatos et al. (2004), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Platystomatichthys sturio* (Kner 1858)**

Distribution: Amazon.

Notes: Barriga (1994), Galacatos et al. (2004).

***Pseudoplatystoma fasciatum* (Linnaeus 1766)**

Distribution: Amazon, Orinoco, Essequibo, Paraná.

Notes: Barriga (1994), Jácome-Negrete (2013).

***Pseudoplatystoma punctifer* (Castelnau 1855)**

Distribution: Amazon.

Notes: Jácome-Negrete et al. (2018).

***Pseudoplatystoma tigrinum* (Valenciennes 1840)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Sorubim elongatus* Littmann, Burr, Schmidt & Isern 2001**

Distribution: Amazon, Orinoco, Essequibo.

Notes: Galacatos et al. (2004).

***Sorubim lima* (Bloch & Schneider 1801)**

Distribution: Amazon, Orinoco, Paraná.

Notes: Barriga (1994), Galacatos et al. (2004).

***Sorubim maniradii* Littmann, Burr & Buitrago-Suárez 2001**

Distribution: Middle, upper Amazon.

***Zungaro zungaro* (Humboldt 1821)**

Distribution: Amazon, Orinoco.

Notes: Barriga (1994).

Family Pseudopimelodidae

***Batrochoglanis villosus* (Eigenmann 1912)**

Distribution: Amazon, Orinoco, Essequibo.

***Microglanis pellopterygius* Mees 1978**

Distribution: Eastern Ecuador.

Notes: Barriga (2011).

Order Synbranchiformes

Family Synbranchidae

Synbranchus marmoratus Bloch 1795

Distribution: Mexico to northern Argentina

Notes: Barriga (1994), Guarderas and Jácome-Negrete (2013).

Order Carangiformes

Family Achiridae

Apionichthys menezesi Ramos 2003

Distribution: Rio Napo in Ecuador, Rio Negro, Orinoco, Amazon.

Notes: Barriga (2011), Valdiviezo-Rivera et al. (2018).

Apionichthys nattereri (Steindachner 1876)

Distribution: Amazon.

Hypoclinemus mentalis (Günther 1862)

Distribution: Amazon, Orinoco, Essequibo

Notes: Barriga (1994), Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Family Cichlidae

Order Cichliformes

Aequidens cf. diadema

Distribution: Amazon, Orinoco, Negro.

Notes: Galacatos et al. (2004).

***Aequidens tetramerus* (Heckel 1840)**

Distribution: Western Amazonia, Orinoco, plus northern drainages.

Notes: Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Valdiviezo-Rivera et al. (2018), Tobes et al. (2022).

***Apistogramma amoena* Cope, 1872**

Distribution: Eastern Ecuador, north-eastern Peru.

Notes: Considered a species inquirenda in *Apistogramma* (*sensu* Kullander (2003)).

***Apistogramma cruzi* Kullander 1986**

Distribution: Peru, Ecuador, Colombia.

Notes: Barriga (1994), Galacatos et al. (2004), Barriga (2011).

***Apistogramma payaminonis* Kullander 1986**

Distribution: Napo Basin in Ecuador.

***Apistogramma playayacu* Römer, Beninde & Hahn 2011**

Distribution: Napo Basin in Ecuador.

***Apistogramma* sp. 1**

Distribution: Eastern Ecuador, Jatuncocha Lake.

***Astronotus ocellatus* (Agassiz 1831)**

Distribution: Western Amazonia, Orinoco.

Notes: Barriga (1994), Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Valdiviezo-Rivera et al. (2018).

***Bujurquina mariae* (Eigenmann 1922)**

Distribution: South America: Meta River Basin of the Orinoco River Basin, Colombia.

***Bujurquina moriorum* Kullander 1986**

Distribution: Napo Basin in Ecuador.

Notes: Barriga (1994), Barriga (2011).

***Bujurquina syspilus* (Cope 1872)**

Distribution: Amazon tributaries in Peru, Ecuador.

***Caquetaia myersi* (Schultz 1944)**

Distribution: Eastern Ecuador.

Notes: Barriga (1994), Barriga (2011).

***Chaetobranchus flavesiensis* Heckel 1840**

Distribution: Amazon, plus northern drainages, Orinoco.

Notes: Barriga (1994), Barriga (2011).

***Cichla monoculus* Spix & Agassiz 1831**

Distribution: Western Amazonia.

Notes: Barriga (1994), Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Cichlasoma cf. amazonarum

Distribution: Western Amazonia, plus northern drainages.

Notes: Barriga (2011).

***Crenicara punctulata* (Günther 1863)**

Distribution: Peru, Ecuador, Colombia, Brazil, Essequibo.

Notes: Barriga (1994), Guarderas and Jácome-Negrete (2013).

***Crenicichla sedentaria* Kullander 1986**

Distribution: Upper Amazon of Ecuador, Peru.

***Heroina isonycterina* Kullander 1996**

Distribution: Upper Amazon of Ecuador, Colombia.

***Heros efasciatus* Heckel 1840**

Distribution: Western Amazonia, Ecuador, Peru, Brazil.

Notes: Barriga (2011), Barriga (1994), Galacatos et al. (2004).

***Hypselecara temporalis* (Günther 1862)**

Distribution: Western Amazonia, Colombia, Ecuador, Peru, Brazil.

Notes: Barriga (1994), Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013).

***Laetacara flavilabris* (Cope 1870)**

Distribution: Western Amazonia, Ecuador, Peru, Brazil.

Notes: Barriga (1994), Galacatos et al. (2004).

***Lugubria cincta* (Regan 1905)**

Distribution: Napo, Amazon.

Notes: Galacatos et al. (2004), Valdiviezo-Rivera et al. (2018), Tobes et al. (2022).

***Lugubria johanna* (Heckel 1840)**

Distribution: Amazon, plus northern drainages.

Mesonauta cf. insignis

Distribution: Amazon River and Orinoco River Basins (Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela).

Notes: Barriga (1994).

***Mesonauta mirificus* Kullander & Silfvergrip 1991**

Distribution: Western Amazonia, Colombia, Ecuador, Peru.

Notes: Barriga (2011).

***Satanoperca jurupari* (Heckel 1840)**

Distribution: Widespread Amazonia, Colombia, Ecuador, Peru, Bolivia, Orinoco.

Notes: Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

***Saxatilia anthurus* (Cope 1872)**

Distribution: Upper Amazon of Ecuador, Peru.

Notes: Galacatos et al. (2004).

***Saxatilia lucius* (Cope 1870)**

Distribution: Upper Amazon of Ecuador, Peru.

***Saxatilia proteus* (Cope 1872)**

Distribution: Upper Amazon of Ecuador, Peru.

Notes: Barriga (1994), Galacatos et al. (2004).

Order Cyprinodontiformes

Family Rivulidae

***Anablepsoides erberi* (Berkenkamp 1989)**

Distribution: Eastern Ecuador.

***Anablepsoides limoncochae* (Hoedeman 1962)**

Distribution: Eastern Ecuador.

Notes: Galacatos et al. (2004).

***Anablepsoides urophthalmus* (Günther 1866)**

Distribution: Amazon.

Notes: Barriga (1994), Barriga (2011).

Order Beloniformes**Family Belonidae*****Potamorrhaphis guianensis* (Jardine 1843)**

Distribution: Amazon, Orinoco, Guianas.

Notes: Barriga (1994), Barriga (2011).

***Pseudotylosurus angusticeps* (Günther 1866)**

Distribution: Eastern Ecuador, eastern Peru, Paraguay, Paraná.

Notes: Barriga (1994).

***Pseudotylosurus microps* (Günther 1866)**

Distribution: Amazon, Orinoco, Guianas.

Notes: Guarderas and Jácome-Negrete (2013).

Order Acanthuriformes**Family Sciaenidae*****Pachyurus stewarti* Casatti & Chao 2002**

Distribution: Eastern Ecuador.

Notes: Barriga (2011).

***Plagioscion squamosissimus* (Heckel 1840)**

Distribution: Amazon, plus northern drainages, Paraguay, Paraná.

Notes: Barriga (1994), Galacatos et al. (2004), WCS (2007), Barriga (2011), Guarderas and Jácome-Negrete (2013), Jácome-Negrete (2013), Valdiviezo-Rivera et al. (2018), Jácome-Negrete et al. (2018).

Order Tetraodontiformes

Family Tetraodontidae

Sphoeroides asellus (Müller & Troschel 1849)

Distribution: Amazon, Orinoco, Essequibo.

Notes: Barriga (1994), Galacatos et al. (2004), Guarderas and Jácome-Negrete (2013), Jácome-Negrete et al. (2018).

Analysis

Fish species in YNP span 13 orders, 47 families, 239 genera and 458 species (Fig. 3). *Characiformes* and *Siluriformes* contributed the most to species richness (43% and 38%, respectively). These are followed by *Cichliformes* and *Gymnotiformes*. The richest families in YNP are *Loricariidae* and *Acestrorhynchidae* (Figs 3, 4). Additionally, 23 families each account for at least 1% of the total fish richness (Fig. 3).

The updated list more than doubles the previous YNP inventory (Barriga 1994) and accounts for 70% of the known fish species in the Napo Basin and 21.9% of the entire Amazon Basin (Jézéquel et al. 2020). The fish richness in YNP surpasses that of other Amazonian reserves of comparable or larger size (Table 1). This underscores Yasuní as a biodiversity hotspot specifically for fishes, which represent the second most species-rich vertebrate group in YNP after birds (Bass et al. 2010).

Discussion

Our study added 205 species to the 253 previously listed by Barriga (1994) for the YNP, representing an 80% increase in species richness. This substantial increase is primarily attributed to a significant expansion of the sampling area, encompassing zones that were not included in the Barriga (1994) list. These additional data were obtained through collection campaigns conducted by MEPN (e.g. Barriga (2011)), samplings in the Cononaco and Curaray Rivers in 2014, unpublished data), MECN (Valdiviezo-Rivera et al. 2018) and USFQ (Swing 2017). Other contributing factors include the description of new species in the YNP (Provenzano-Rizzi and Barriga-Salazar 2020, Provenzano-Rizzi et al. 2024), new records (Chuctaya et al. 2021, Chuctaya et al. 2023), increased collections from environmental consulting activities, taxonomic re-identifications and curatorial activities involving the biological collections analysed in the present study.

Our results also align with the common structure of the Neotropical ichthyofauna, characterised by the dominance of ostariophysan fishes (Sleen and Albert 2018). Characiform species showed the highest percentage, followed by *Siluriformes*. This proportional dominance at the order level has also been observed in other inventories

conducted in areas surrounding the YNP, such as the Upper Napo River Basin (Anaguano-Yancha and Cueva 2016), Cuyabeno (Barriga et al. 2016) and the Pastaza River Basin (Rivadeneira et al. 2010). Similar patterns have been reported in other regions of the western (Meza-Vargas et al. 2021), central (Oliveira et al. 2020) and lower Amazon (Fróis et al. 2021).

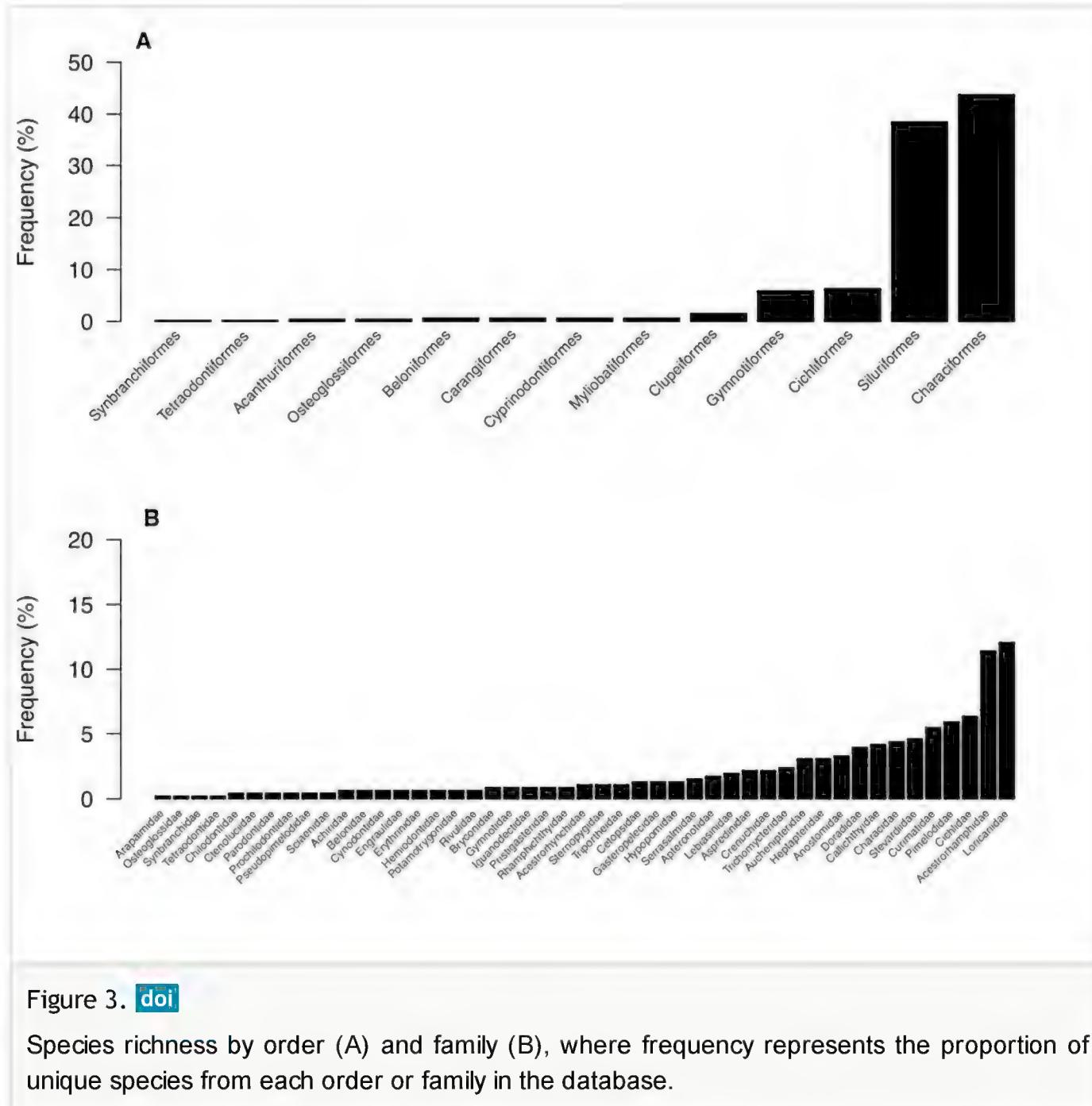


Figure 3. [doi](https://doi.org/10.31233/osf.io/2424g)

Species richness by order (A) and family (B), where frequency represents the proportion of unique species from each order or family in the database.

This pattern extends to the family level, with *Loricariidae* (55 species) and *Acestrorhamphidae* (52 species) being the most species-rich families. *Loricariidae* has long been amongst the most diverse families, historically ranking second in species richness (Roxo et al. 2019). However, taxonomic revisions splitting *Acestrorhamphidae*, *Characidae* and *Stevardiidae* from the broader *Characidae* (Melo et al. 2024) have elevated *Loricariidae* to the top position. The high species richness of *Loricariidae* reflects significant lineage and ecological diversification (Lujan et al. 2012), whereas the diversity of characiform families, widely distributed across the Neotropics (Reis et al. 2003, Albert and Reis 2011), results from habitat shifts, morphological diversification and trophic niche adaptations (Guisande et al. 2012). Furthermore, high relative diversity of

Cichlidae (29) and *Pimelodidae* (28) coincides with diversity patterns described in the Upper Amazon (Dagosta and Pinna 2019, Meza-Vargas et al. 2021). Although these patterns in the YNP coincide with others previously recorded in the region, a comparative analysis between its extension and the recorded species shows a greater concentration of diversity per area in relation to other historically diverse protected areas, such as Mamirauá Sustainable Development Reserve with 34% more species or even with areas that quadruple its extension, such as Tumucumaque National Park registering 120% greater fish richness (Table 1).

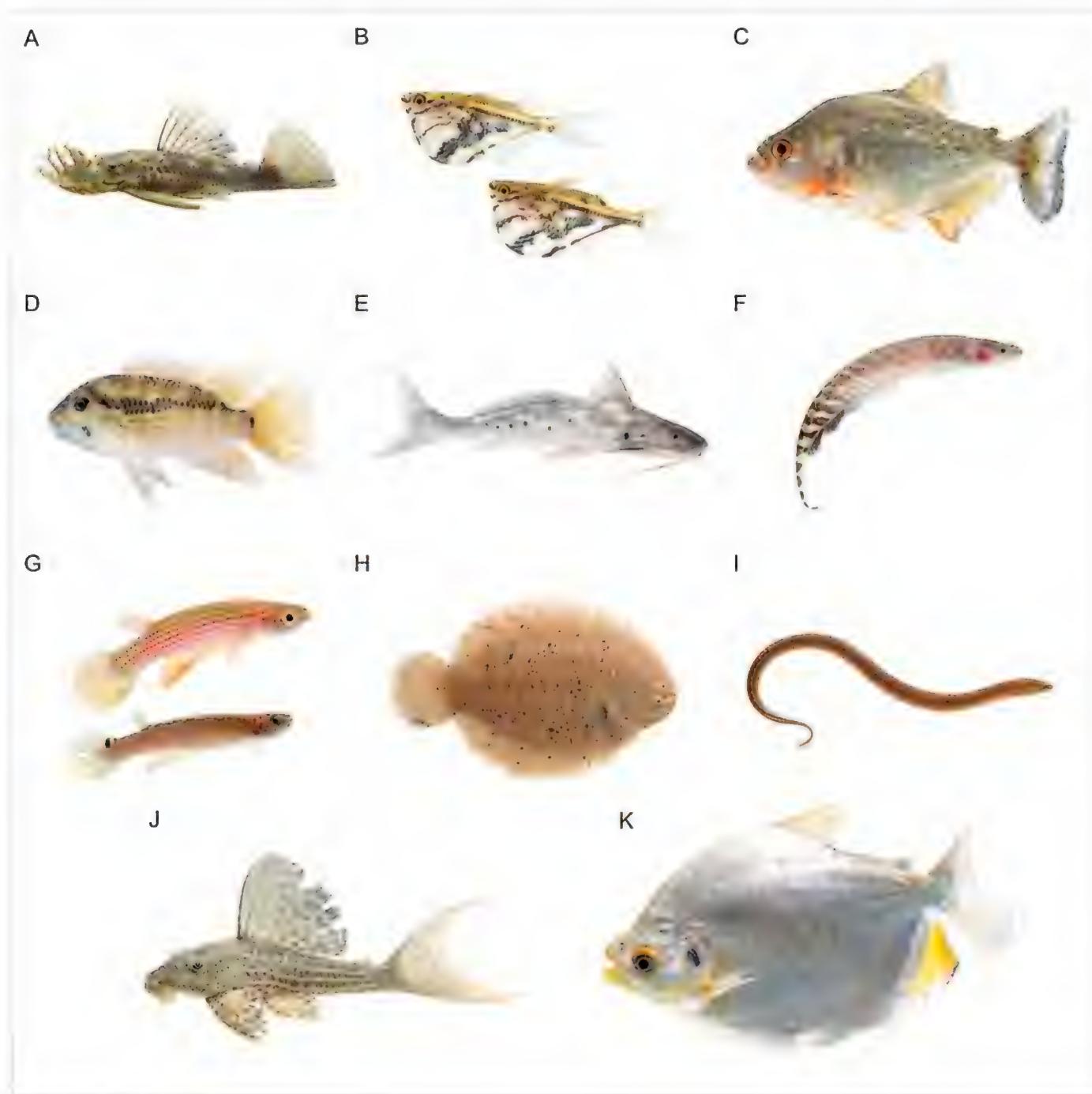


Figure 4. [doi](#)

Examples of species from Yasuní National Park denoting their morphological and phylogenetic diversity. **A** *Ancistrus malacops* (Loricariidae); **B** *Carnegiella strigata* (Gasteropelecidae); **C** *Serrasalmus rhombeus* (Serrasalmidae); **D** *Bujurquina moriorum* (Cichlidae); **E** *Calophysus macropterus* (Pimelodidae); **F** *Gymnotus carapo* (Gymnotidae); **G** *Anablepsoides limoncochae* (Rivulidae); **H** *Hypoclinemus mentalis* (Achiridae); **I** *Synbranchus marmoratus* (Synbranchidae); **J** *Hypostomus hemicochliodon* (Loricariidae); **K** *Mylossoma albiscopum* (Serrasalmidae). Photos: courtesy of José Vieira (<https://www.ex-situphotography.com/>).

The extraordinary fish diversity in YNP results from multiple ecological and biogeographic factors. First, the convergence of white- and black-water rivers in the YNP support distinct fish communities typical of sediment-rich white waters and tannin-rich black waters (Bogotá-Gregory et al. 2020). This area has been categorised as one of the ecoregions with the highest density of fish species in the Neotropics (Albert and Reis 2011). Second, major rivers in this area have been historically shaped by shifting connections and isolations fostering diversification of fish assemblages (Albert et al. 2006, Londoño-Burbano and Britto 2023). Finally, the YNP's connection to central Amazonia likely facilitates extensive sympatric diversification in the western Amazon (Wesselingh and Carina 2011, Londoño-Burbano and Britto 2023). Remarkably, the updated list for YNP reports no introduced species, highlighting it as one of Ecuador's few protected areas where native fish populations remain unthreatened by the impacts of exotic species (Aguirre et al. 2021). This underscores the importance of conservation efforts in YNP, which provide ecosystem services such as maintenance of biodiversity and provision of food security (Berlin and Markell 1977, Dufour 1983, Sirén 2011).

Table 1.

Fish richness from different protected areas of the Amazon Basin.

Protected Area	Area (km ²)	# Species	Reference
Yasuní National Park (YNP)	9,823	458	This study
Mamirauá Sustainable Development Reserve (MSDR), Brazil	11,137	340	Queiroz and Peralta (2010)
Tumucumaque National Park, Brazil	38,867	207	Bernard (2008)
Jau National Park, Brazil	22,720	320	IUCN (2000)
Madidi National Park, Bolivia	18,958	333	National-Parks (2022)
Manu National Park, Peru	17,162.95	201	Parques-Nacionales (2019)
La Paya National Natural Park, Colombia	4,401	230	Peña Alzáte et al. (2020)

The Park's fish diversity reflects a wide range of ecologies, morphologies and life history traits (Fig. 4). Indigenous communities depend on at least 72 species for consumption, trade and medicinal uses, with large predatory pimelodids being particularly favoured (García-Dávila et al. 2013, García-Dávila et al. 2018, Duponchelle 2021). Conservation concerns include 19 threatened species in YNP, many of which are heavily exploited by artisanal fisheries (Fig. 5) (Escobar-Camacho 2024).

Most fish collections from MEPN and MECN-DP (Fig. 6) are concentrated in medium to large rivers such as the Napo, Tiputini, Yasuní and Shiripuno, leaving the southern interior of YNP under-sampled. Given the high ichthyological diversity across rivers, forest streams, and lagoons of the northern area of YNP (Ibarra and Stewart 1989, Bojsen and Barriga 2002, Galacatos et al. 2004), identifying these sampling gaps is crucial for understanding migration, reproduction and feeding patterns (Duponchelle 2021). Expanding surveys in these areas may document species recorded outside YNP or refine distribution knowledge of species already present. This has been evident in studies of northern YNP, where cryptic diversity and rediscovered species have been reported

(Escobar-Camacho et al. 2015, Provenzano-Rizzi and Barriga-Salazar 2020, Valdiviezo-Rivera et al. 2021, Říčan et al. 2023).

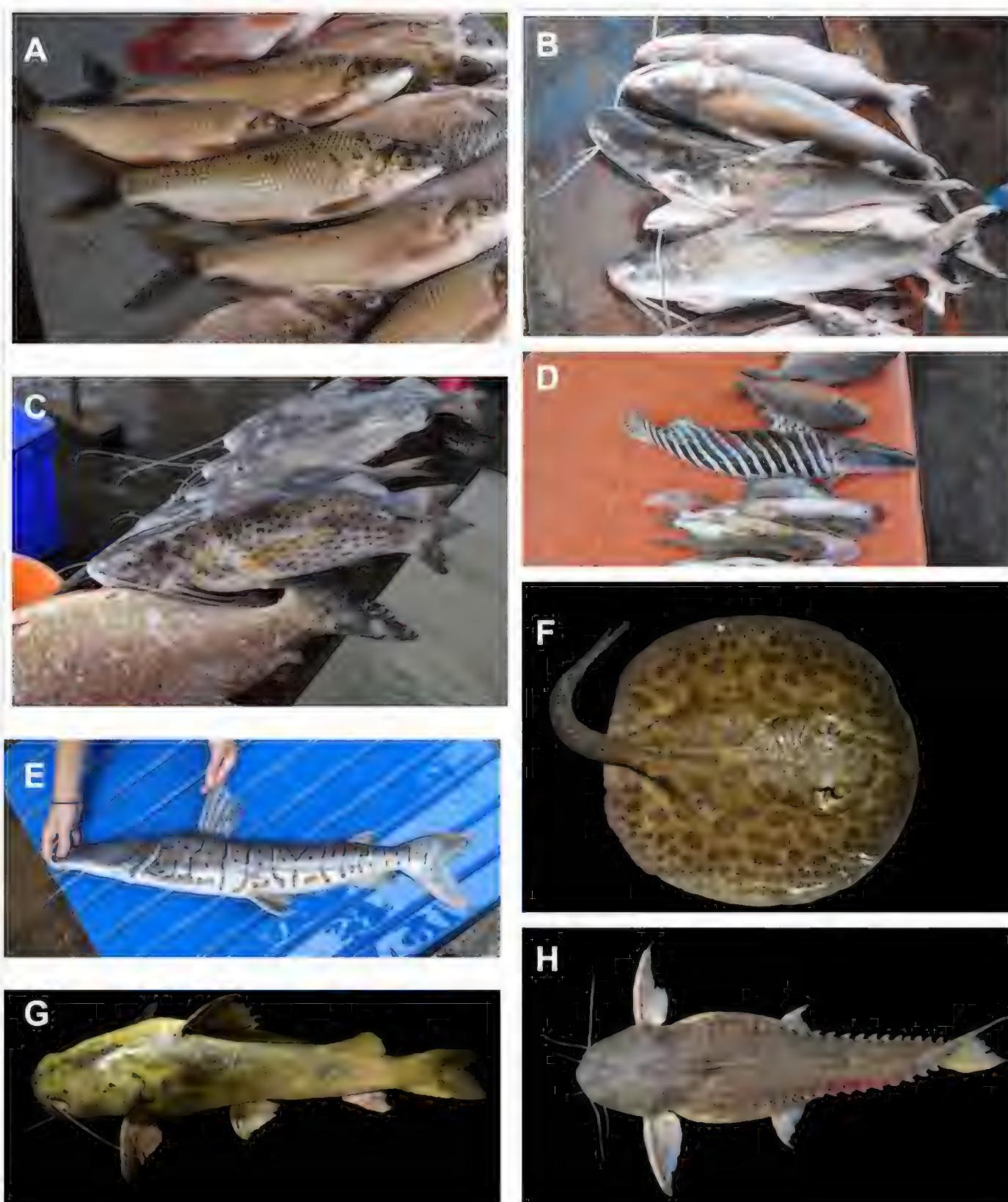


Figure 5. [doi](#)

Examples of species exploited in artisanal fisheries for livelihoods and food security in Yasuní National Park. **A** *Prochilodus nigricans* (*Prochilodontidae*); **B** *Platynemichthys notatus* (*Pimelodidae*); **C** *Aguarunichthys torosus* (*Pimelodidae*); **D** *Brachyplatystoma tigrinum* (*Pimelodidae*); **E** *Pseudoplatystoma fasciatum* (*Pimelodidae*); **F** *Potamotrygon motoro* (*Potamotrygonidae*); **G** *Zungaro zungaro* (*Pimelodidae*); **H** *Pterodoras granulosus* (*Doradidae*). Photos: courtesy of Kelly Swing (A, B, C and D), Jonathan Valdiviezo-Rivera (F, G and H) and Daniel Escobar-Camacho (E).

Beyond geographic sampling limitations, species lists for large regions like the western Amazon are further complicated by cryptic diversity, rare species and behavioural adaptations. Small-bodied or elusive species often evade detection, requiring targeted efforts for confirmation (Swing et al. 2014). Some species are rarely captured due to habitat preferences or migration patterns, as seen in recent rediscoveries like *Rhyacoglanis pulcher* and *Micromyzon akamai* in the Curaray River Basin (Chuctaya et al. 2021, Chuctaya et al. 2023). Large species also present sampling challenges, though evidence, such as drifting larvae of large pimelodids in the Napo River (Hermann et al. 2021), confirms their presence. Similarly, migratory siluriforms such as *Aguarunichthys torosus* and *Pterodoras granulosus* (Fig. 5), while absent from museum collections, frequently appear in nearby markets, indicating their likely presence in the study area.

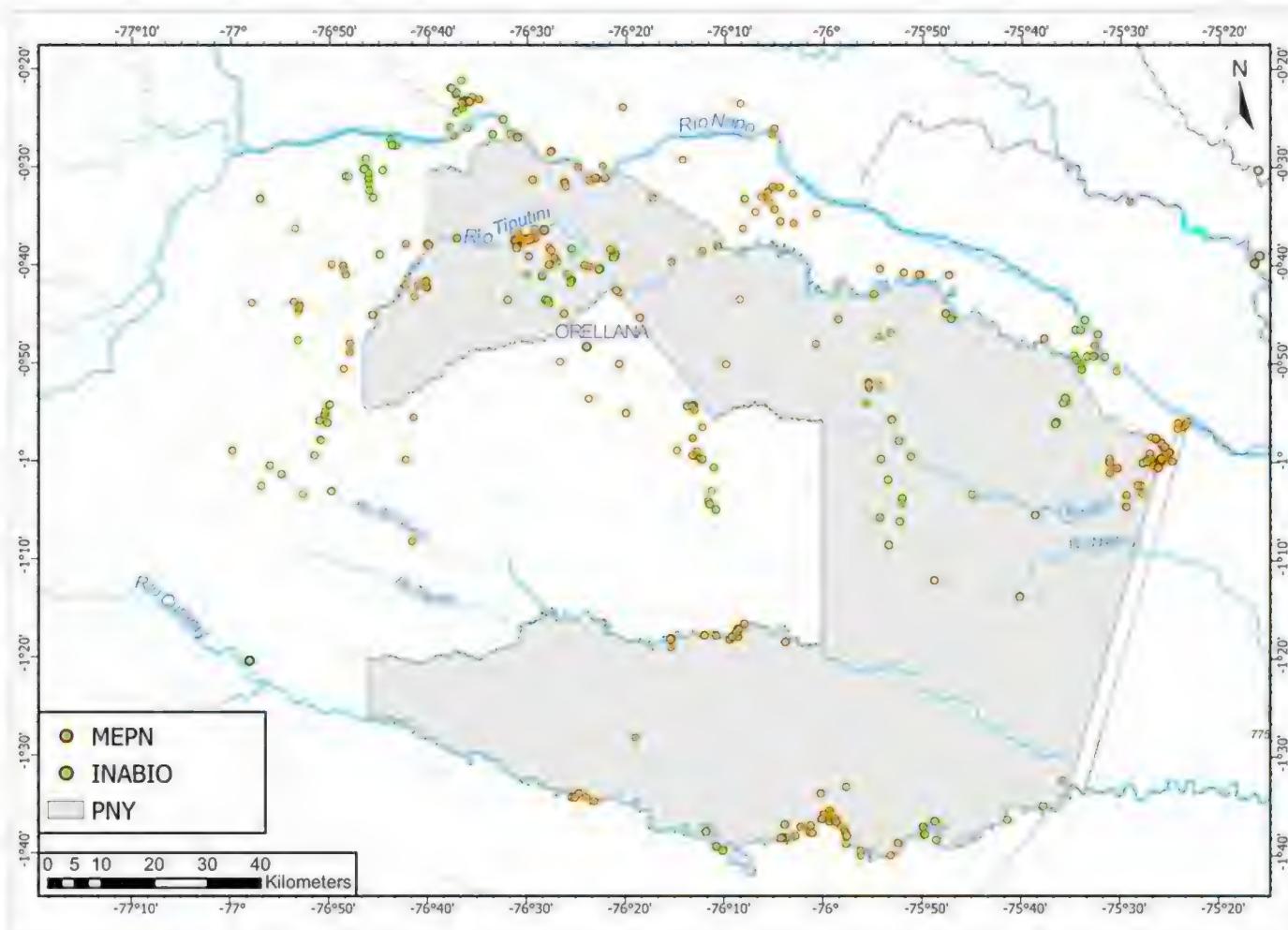


Figure 6. [doi](#)

Yasuní National Park and sampling sites based on records from MEPN and MECN-DP.

The intent of this list is to provide a baseline for future studies that would use this information to develop hypotheses and better understand fish diversity in the Ecuadorian Amazon. This list is also intended to provide basic information to the scientific community and society at large so that adequate measures may be applied for the conservation of these natural resources and the maintenance of genetic diversity.

Conclusions

By compiling curated datasets, we developed an updated list of freshwater fish species in YNP, doubling species richness compared to previous lists. This list represents 70% of

the Napo River Basin's known species and 20% of the Amazon Basin's. Our results highlight the ecological and cultural importance of YNP, including its provision of services to indigenous communities and the threats several species face from anthropogenic disturbances. We identify under-sampled habitats requiring further study and underscore the need for preserving YNP's biodiversity and ecosystem services. This list aims to support future research, management and conservation efforts.

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